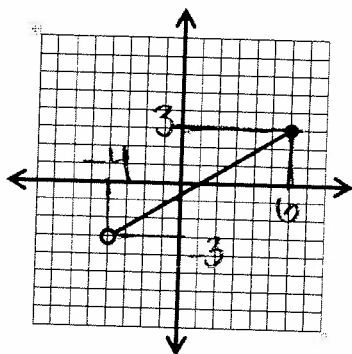


Describe the Domain and Range for each of the functions

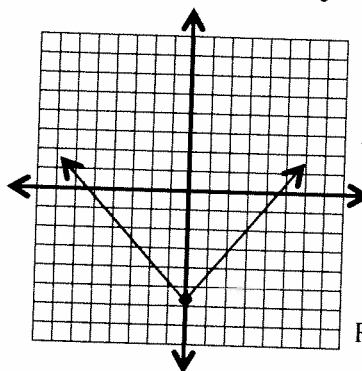
1.



Domain $-4 < x \leq 6$

Range $-3 \leq y \leq 3$

2.



Domain $-\infty < x < \infty$

Range $-5.5 \leq y < \infty$

Given the functions $f(x) = x^2 + 7x$ and $g(x) = \sqrt{x-3}$ find the value of each expression below.

3. $f(4)$

$(4)^2 + 7(4)$

$16 + 28 = 44$

4. $g(19)$

$\sqrt{19-3}$

$\sqrt{16} = 4$

5. x , if $f(x) = -12$

$x^2 + 7x = -12$

$x^2 + 7x + 12 = 0$

$(x+3)(x+4) = 0$

$x = -3$

$x = -4$

6. x , if $g(x) = 4$

$\sqrt{x-3} = 4$

$x-3 = 16$

$x = 19$

Find the equation for each line described below

7. The line that passes through the point $(2, 5)$ and has a slope of -3

$y = -3x + 11$

$-3(2) + b = 5$

$-6 + b = 5$

$b = 11$

8. The line that passes through the points $(-1, 3)$ and $(1, 9)$

$y = 3x + 6$

$m = \frac{9-3}{1-(-1)} = \frac{6}{2} = 3$

$3(1) + b = 9$

$3 + b = 9$

$b = 6$

Solve each equation below.

9. $\frac{3x+1}{4} = \frac{2x+7}{5}$

$5(3x+1) = 4(2x+7)$

$15x + 5 = 8x + 28$

$7x = 23$

$x = \frac{23}{7} = 3.28$

10. $\frac{x}{2} + \frac{4}{5} = 3$

$\frac{5x}{10} + \frac{8}{10} = \frac{30}{10}$

$5x + 8 = 30$

$5x = 22$

$x = 4.4$

11. The booster club has raised \$6000. They expect to raise \$800 per week. In how many weeks will they have \$20,000? Complete the table, write an equation and solve.

Week	0	1	2	3
\$	6000	6800	7600	8400

Equation $y = 6000 + 800x$

$6000 + 800x = 20,000$

$800x = 14,000$

$x = 17.5$

Number of weeks to reach \$20,000 17.5 weeks

Chapter 2

State whether each sequence is arithmetic, geometric or neither.

1. $3^2, 4^2, 5^2$
 $9, 16, 25, \dots$
 +
 neither

2. $2, 12, 72, \dots$
 $\times 6 \times 6$
 geometric

3. $10, 20, 30, \dots$
 $+10 +10$
 arithmetic

Given the functions $f(x) = 3x + 4$ and $g(x) = \frac{2x}{3} + 5$ find the value of each expression below.

4. $f(-8)$
 $3(-8) + 4$
 $-24 + 4 = -20$

5. $g(6)$
 $\frac{2(6)}{3} + 5$
 $\frac{12}{3} + 5$
 $4 + 5 = 9$

6. x if $g(x) = 9$
 $\frac{2x}{3} + 5 = 9$
 $2x + 15 = 27$
 $2x = 12$
 $x = 6$

7. x if $f(x) = 25$
 $3x + 4 = 25$
 $3x = 21$
 $x = 7$

Solve each system of equations algebraically

8. $y = 2x - 7$
 $5x - 4y = 19$

$5x - 4(2x - 7) = 19$
 $5x - 8x + 28 = 19$
 $-3x = -9$
 $x = 3$
 $y = 2(3) - 7 = -1$
 $(3, -1)$

9. $2(3x + y = -2)$
 $3(-3) + y = -2$
 $-9 + y = -2$
 $y = 7$
 $5x - 2y = -29$
 $5x - 14 = -29$
 $5x = -15$
 $x = -3$
 $(-3, 7)$

10. $4(8x + 3y = -17)$
 $8(1/2 + 3y = -17)$
 $4 + 3y = -17$
 $3y = -21$
 $y = -7$
 $10x + 4y = -23$
 $10x - 28 = -23$
 $10x = 5$
 $x = 1/2$
 $(1/2, -7)$

State the x and y intercepts of the following.

11. $3x - 5y = 30$
 $3x = 30$
 $x = 10$
 $-5y = 30$
 $y = -6$

12. $y = x^2 - 7x + 10$
 $(x - 5)(x - 2) = 0$
 $x = 5$
 $x = 2$
 $(5, 0)$
 $(2, 0)$

13. $2y = 5x - 14$
 $y = 7$
 $(0, 7)$
 $5x - 14 = 0$
 $x = 14/5 = 2.8$
 $(2.8, 0)$

Convert each percent increase or decrease into a multiplier.

14. 25% increase
 $1 + .25$
 1.25

15. 8.2% increase
 $1 + .082$
 1.082

16. 7% decrease
 $1 - .07$
 $.93$

A ball was dropped from various heights and the data was recorded in the table below. All distances are measured in inches.

Drop Height	50	25	70	95	120	150
Rebound Height	41	20.5	57.4	77.9	98.4	123



17. What is the rebound ratio for their ball?
 $\frac{20.5}{25} = .82$

18. Predict how high the ball will rebound if it is dropped from 40 inches.

$40(.82) = RH$
 32.8 in

19. If the rebound height is 65.6 inches, from what height was it dropped?

$\frac{65.6}{.82} = DH$
 $DH = 80 \text{ in}$